

or substantially zero. Thus, the present process includes the detection of the absence of such chemical species, at least to the limitations of the analytical method employed.

The foregoing descriptions of the present invention at times refer specifically to aqueous influents and effluents, and the use of an aqueous system for describing a membrane filtration system and the operation of the present invention therein is exemplative. A person of ordinary skill in the art, given the disclosures of the present specification, would be aware of how to apply the foregoing descriptions to nonaqueous membrane filtration systems.

"Treatment chemicals and/or agents" is meant herein without limitation to include treatment chemicals that enhance membrane separation process performance, antiscalants that retard/prevent membrane scale deposition, antifoulants that retard/prevent membrane fouling, biodispersants, microbial-growth inhibiting agents, such as biocides, and cleaning chemicals that remove membrane deposits, like materials and combinations thereof.

It should be appreciated that the present invention is applicable to all industries that can employ membrane separation processes. For example, the different types of industrial processes in which the method of the present invention can be applied generally include raw water processes, waste water processes, industrial water processes, municipal water treatment, food and beverage processes, pharmaceutical processes, electronic manufacturing, utility operations, pulp and paper processes, mining and mineral processes, transportation-related processes, textile processes, plating and metal working processes, laundry and cleaning processes, leather and tanning processes, and paint processes.

In particular, food and beverage processes can include, for example, dairy processes relating to the production of cream, low-fat milk, cheese, specialty milk products, protein isolates, lactose manufacture, whey, casein, fat separation, and brine recovery from salting